AMENDMENTS TO THE CLAIMS

1. (currently amended) A system for calculating and reporting slump, comprising:

a delivery vehicle having a mixing drum and hydraulic drive for rotating the mixing drum,

a rotational sensor mounted to the mixing drum and configured to sense drum activity in the form of a rotational speed of movement of the mixing drum;

a hydraulic sensor coupled to the hydraulic drive and configured to sense drum activity in the form of a hydraulic pressure required to turn the mixing drum; and

a programmable processor, and

a program memory storing a program that causes the processor to compute a rheological value for a mixture within the mixing drum using information from the sensors, wherein the rotational speed of movement of and hydraulic pressure applied to the mixing drum over a period of time is used in calculating the rheological parameter of the material within the mixing drum.

2. (currently amended) The system of claim 1, wherein the material within the mixing drum is concrete and the history of the rotational speed of the mixing drum is used to qualify the accuracy of a calculation of current slump.

3. (currently amended) The system of claim 2, wherein the material within the mixing drum is concrete and the stability of rotational speed of the mixing drum is used to qualify the accuracy of a calculation of current slump.

4. – 14. Cancelled.

15. (previously presented) The system of claim 1 wherein the material within the mixing drum is concrete and said processor further determines from the sensed rotational speed of or hydraulic pressure applied to the drum, or both, one or more of:

adequacy of mixing of concrete,

the occurrence of a concrete pour action from the mixing drum,

appropriateness of a concrete discharge from the mixing drum,

concrete slump values,

the occurrence of a fluid discharge into the mixing drum,

appropriateness of a fluid discharge into the mixing drum,

effect of a fluid discharge into the mixing drum,

water supply conditions.

16. (previously presented) The system of claim 1 wherein said processor determines whether to discharge fluid into said drum based upon rheological properties determined by said processor.

17. (previously presented) The system of claim 16 wherein said fluid discharged into said drum comprises a chemical additive.

18. (previously presented) The system of claim 17 wherein said chemical additive is a superplasticizer.

19. (previously presented) The system of claim 16 wherein said fluid discharged into said drum comprises water.

20-27. (Cancelled)